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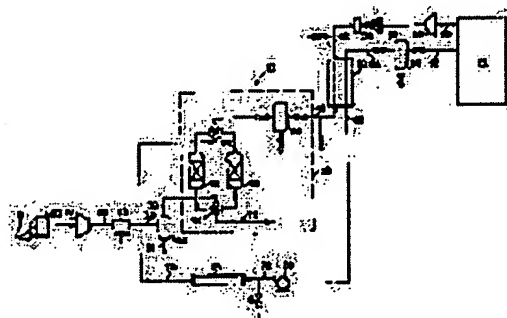
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(54) METHOD FOR PRODUCING REFRIGERATING ATMOSPHERE AND DEVICE FOR COOLING ARTICLE TO TEMPERATURE OF -100° F (-73° C) OR BELOW

(57)Abstract:

PURPOSE: To suppress frosting of a freezer and also to prevent circulation of bacteria by a method wherein after the atmosphere is sucked in through a particulate filter and compressed, it is cooled down to remove moisture and gaseous contaminants, the compressed air is expanded to produce cold gas of very low temperature and it is introduced into an adiabatic closed space.

CONSTITUTION: In a device for cooling an adiabatic closed space 14 of a foodstuff freezer, a filter 20 which can filter particulate substances is provided and the air passing through this filter 20 is compressed by a multistage compressor 24. The air of high temperature and high pressure coming out from the compressor 24 is cooled down to the vicinity of an ambient temperature by a cooler 28 and then introduced into a separator 24 to separate and remove water therefrom and then it is led to a turbo expansion unit 58 via vessels 39 and 40 holding molecular sieves for removing moisture and gaseous contaminants, a particulate trap 46, a heat exchanger 50 and a particulate strainer 54. The cooled gas produced in the turbo expansion unit is supplied to the adiabatic closed space 14 to refrigerate foodstuff. The air in the adiabatic closed space 14 is circulated through a particulate filter 64, the heat exchanger 50, a blower 70 and a sterilizing unit 74.



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